In the Claims, kindly amend Claims 26, 29 and 30, and add new Claim 44 as follows:

1. (Original) In a magnetic position and orientation measurement system, the improvement comprising means for containing a magnetic field used to conduct measurements of position and orientation of an object, said containing means comprising a magnetic field permeable attenuator located adjacent a region where position and orientation of said object is being measured by a magnetic field, said attenuator attenuating said magnetic field on a side of said attenuator remote from said region, said system including a transmitter located on a side of said attenuator opposite said remote side, and a compensation coil at least partially surrounding said attenuator, and operated concurrently with operation of each transmitter coil to reduce magnetic field distortions peripheral of said attenuator.

2. (Original) The system of Claim 1, wherein said attenuator is flat.

3. (Original) The system of Claim 1, wherein said attenuator has a uniform thickness in the range of 0.01 to 0.25 inches.

4. (Original) The system of Claim 1, wherein said attenuator is made of mumetal.

5. (Original) The system of Claim 1, further including a conductive plate below said attenuator with respect to said region.

6. (Original) The system of Claim 5, wherein said conductive plate has a thickness in the range of 0.1875 to 0.25 inches.

7. (Original) The system of Claim 5, wherein said conductive plate is made of a non-ferrous metal.

8. (Original) The system of Claim 7, wherein said non-ferrous metal comprises aluminum.

9. (Original) The system of Claim 1, further including a spacer between said attenuator and said transmitter coils.

10. (Original) The system of Claim 1, wherein said compensation coil comprises a single coil.

11. (Original) The system of Claim 1, wherein said compensation coil comprises a plurality of individual coils spaced in a prescribed pattern about a periphery of said attenuator.

12. (Original) The system of Claim 1, wherein a transmitter driver is provided to drive said transmitter coils.

13. (Original) The system of Claim 12, wherein a compensation coil driver separate from said transmitter driver is provided to drive said compensation coil.

14. (Original) The system of Claim 12, wherein said transmitter driver also comprises a compensation coil driver adapted to drive said compensation coil.

15. (Original) The system of Claim 1, wherein said transmitter and compensation coil are wired in series.

16. (Original) The system of Claim 1, wherein said transmitter and compensation coil are wired in parallel.

17. (Original) A magnetic position measurement system, comprising:

a) a thin magnetic field permeable attenuator;

b) a thin conductive plate below said attenuator;

c) a thin transmitter above said attenuator, said transmitter capable of measuring in three dimensions;

d) a compensation coil about the periphery of one of said conductive plate or said attenuator.

18. (Original) The system of Claim 17, wherein said compensation coil surrounds a periphery of said conductive plate.

19. (Original) The system of Claim 17, wherein said compensation coil surrounds a periphery of said attenuator.

20. (Original) The system of Claim 17, wherein said conductive plate is made of aluminum.

21. (Original) The system of Claim 17, wherein said attenuator is made of mumetal.

22. (Original) The system of Claim 17, wherein said compensation coil comprises a single coil.

23. (Original) The system of Claim 17, wherein said compensation coil comprises a plurality of individual coils spaced about a periphery of said conductive plate or permeable attenuator in a desired pattern.

24. (Original) The system of Claim 17, wherein said transmitter and compensation coil are wired in series.

25. (Original) The system of Claim 17, wherein said transmitter and compensation coil are wired in parallel.

26. (Currently Amended) In a transmitter transmitting a magnetic field in a space to measure position of an object in said space, the improvement comprising a magnetic field permeable attenuator in association with said transmitter and a coil adjacent [at least partially surrounding] said attenuator [transmitter], said coil being activated concurrently with activation of said transmitter to reduce distortions of said magnetic field.

27. (Original) The transmitter of Claim 26, wherein said magnetic field comprises an electromagnetic field.

28. (Original) The transmitter of Claim 26, wherein said transmitter transmits a field to measure position and orientation of said object in six degrees of freedom.

29. (Currently Amended) The transmitter of Claim 26, wherein said coil completely surrounds said [transmitter] attenuator.

30. (Currently Amended) The transmitter of Claim 26, wherein said coil comprises a plurality of coils spaced about a periphery of said [transmitter] attenuator in a prescribed pattern.

31. (Original) The transmitter of Claim 26, wherein said transmitter has three mutually orthogonal coils.

32. (Original) The transmitter of Claim 26, further including a common driver for said transmitter and said coil.

33. (Original) The transmitter of Claim 26, further including a first driver for said transmitter and a second driver for said coil.

34. (Original) A method of measuring position and orientation of an object in a prescribed three dimensional space, including the steps of:

a) defining a three dimensional space;

b) locating a magnetic field permeable attenuator adjacent said space;

c) placing a transmitter on a side of said attenuator facing said space;

d) locating a compensation coil surrounding said attenuator;

e) operating said transmitter and compensation coil concurrently, and

f) measuring position of said object.

35. (Original) The method of Claim 34, further including the step of locating a spacer between said transmitter and attenuator.

36. (Original) The method of Claim 34, further including the step of locating a conductive plate below said attenuator with respect to said space.

37. (Original) The method of Claim 34, wherein said compensation coil comprises a plurality of coils and further including the step of operating some of said coils when operating one transmitter coil, and operating others of said compensation coils when operating another of said transmitter coils.

38. (Original) The method of Claim 34, wherein said locating step includes the step of locating an attenuator made of mumetal.

39. (Original) The method of Claim 36, further including the step of providing the conductive plate in the material aluminum.

40. (Original) The method of Claim 34, wherein said operating step includes the step of providing said transmitter and compensation coil with separate drivers.

41. (Original) The method of Claim 34, wherein said operating step includes the step of providing said transmitter and compensation coil with a common driver.

42. (Original) The method of Claim 34, further including the step of wiring said transmitter and compensation coil in series.

43. (Original) The method of Claim 34, further including the step of wiring said transmitter and compensation coil in parallel.

44. (New) The transmitter of Claim 26, wherein said attenuator has a periphery, said coil spaced about said periphery of said attenuator.